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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/593,986

09/25/2008

Juliane Kluge

UMICORE 0175-US

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23719 7590 12/04/2009  
KALOW & SPRINGUT LLP  
488 MADISON AVENUE  
19TH FLOOR  
NEW YORK, NY 10022

EXAMINER

BERNS, DANIEL J

ART UNIT

PAPER NUMBER

1793

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/593,986	<b>Applicant(s)</b> KLUGE ET AL.	
	<b>Examiner</b> DANIEL BERNS	<b>Art Unit</b> 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 17 August 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-11 and 13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-11 and 13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Terminal Disclaimer ("TD")***

1. The TD filed on 8-17-09 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of Pat. No. US 6,858,193 to Ruwisch et al. has been reviewed and is accepted. The TD has been recorded. All double-patenting rejections based upon the '193 patent are overcome thereby and are withdrawn.

### ***Claim Rejections - 35 USC § 103***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. In considering the obviousness rejections below, the applicant should note that the person having ordinary skill in the art has the capability of understanding the scientific and engineering principles applicable to the claimed invention. The references of record in the application reasonably reflect this level of skill.

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6. Claims 1-5, 7-11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruwisch et al., Pre-grant Pub. No. US 2003/0125202 (published 7/3/03) (“Ruwisch”)<sup>1</sup> in view of Strehlau et al., US 6,350,421 (2002) (“Strehlau”). Regarding claim 1 as amended, Ruwisch teaches a nitrogen oxide (“NO<sub>x</sub>”) storage catalyst comprising an Mg/Al mixed oxide support material doped with rare earth oxide and comprising a NO<sub>x</sub> storage material supported thereon, wherein the mixed oxide contains MgO in within the claimed range. *See id.* at, e.g., par. 16, 42-44 and 46; Tables 2-3; Ex. 1-7. Ruwisch’s NO<sub>x</sub> storage catalyst further comprises a catalytically-active Pt coating upon its rare earth oxide-doped, NO<sub>x</sub> storage material-comprising Mg/Al mixed oxide support material. *See id.* at par. 43-44; Table 3; Ex. 1-7. While Ruwisch does not explicitly teach the presence of its NO<sub>x</sub> storage material in a 3-25 wt. % range, this limitation is taught by Strehlau.

Strehlau teaches a NO<sub>x</sub> storage catalyst comprising a K, Cs, Ba, Mg, Ca, or Sr oxide, carbonate, or hydroxide NO<sub>x</sub> storage material upon a rare earth metal-doped or bi-metallic support, similar to Ruwisch’s NO<sub>x</sub> storage catalyst. *See Strehlau* at col. 4, ln. 55 to col. 5, ln. 26. Strehlau teaches the desirability of employing a NO<sub>x</sub> storage material in amounts of 10-45 wt. % in relation to the NO<sub>x</sub> storage catalyst’s overall weight. *See id.* at col. 5, ln. 60-63. Given Strehlau’s statement of the effectiveness of employing 10-45 wt. % NO<sub>x</sub> storage material, and the fact that said range touches and/or overlaps that claimed, the latter is rendered *prima facie* obvious thereby as it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ such amounts of NO<sub>x</sub> storage material as taught by Strehlau

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<sup>1</sup> Applicant should note that Ruwisch is within the same document/application family as EP 1317953, appearing in applicant’s 9/25/06 Information Disclosure Statement. The citations to Ruwisch above should also be inferred to cite to the appropriate, corresponding passages in EP 1317953, although explicit citations thereto have been omitted for simplicity and to avoid confusion.

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within Ruwisch's overall methodology. *See, e.g., In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976) (holding that a *prima facie* case of obviousness exists where claimed ranges "overlap or lie inside ranges disclosed by the prior art"); MPEP § 2144.05.

Regarding claims 2-3, Ruwisch teaches oxides of Ce, Nd, Sm, La, Pr, and/or mixtures thereof as suitable rare earth oxides. *See id.* at par. 42 and 48; Table 3; Ex. 1-7.

Regarding claim 4, Ruwisch teaches oxides, carbonates or hydroxides of Mg, Ca, Sr, Ba, the alkali metals, and/or mixtures thereof as suitable NO<sub>x</sub> storage materials. *See id.* at par. 36-37 and 48.

Regarding claim 5, Ruwisch teaches the inclusion of ~0.5 to ~10 wt. % La<sub>2</sub>O<sub>3</sub> and/or Pr<sub>2</sub>O<sub>3</sub> within its NO<sub>x</sub> storage material's support composition. *See id.* at par. 49.

Regarding claim 7, Ruwisch teaches Pt deposited upon the NO<sub>x</sub> storage material, where said material additionally comprises an oxygen-storing material based on Ce oxide, such as Ce oxide or a Ce/Zr mixed oxide. *See id.* at par. 44 and 46-47.

Regarding claim 8, Ruwisch teaches the optional presence of Pd along with the Pt coating previously discussed. *See id.* at par. 43-44; Table 3; Ex. 2 and 4-7.

Regarding claims 9-10, Ruwisch teaches the optional presence of Rh-coated alumina within its NO<sub>x</sub> storage catalyst. *See id.* at par. 45; Table 3; Ex. 3-7.

Regarding claim 11, Ruwisch teaches NO<sub>x</sub> storage catalyst comprising Pt coated upon an Mg/Al mixed oxide support material doped with rare earth oxide, wherein the mixed oxide contains 1-30 wt. % MgO; the rare earth oxide is present in values of ~0.5 to ~10 wt. % of the overall support material's weight. *See id.* at par. 16, 42-44, 46 and 49; Tables 2-3; Ex. 1-7.

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Regarding claim 13, Strehlau teaches a NO<sub>x</sub> storage catalyst comprising a K, Cs, Ba, Mg, Ca, or Sr oxide, carbonate, or hydroxide NO<sub>x</sub> storage material upon a rare earth metal-doped or bi-metallic support, similar to Ruwisch's NO<sub>x</sub> storage catalyst. *See* Strehlau at col. 4, ln. 55 to col. 5, ln. 26. Strehlau teaches the desirability of employing a NO<sub>x</sub> storage material in amounts of 10-45 wt. % in relation to the NO<sub>x</sub> storage catalyst's overall weight. *See id.* at col. 5, ln. 60-63. Given Strehlau's statement of the effectiveness of employing 10-45 wt. % NO<sub>x</sub> storage material, and the fact that said range touches that claimed, the latter is rendered *prima facie* obvious thereby as it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ such amounts of NO<sub>x</sub> storage material as taught by Strehlau within Ruwisch's overall methodology. *In re Wertheim*; MPEP § 2144.05.

#### ***Response to Arguments***

7. Applicant's 8-17-09 arguments regarding the non-applicability of Burk et al., US 4,883,783 to the instant claims have been fully considered and are persuasive. All rejections based in whole or in part upon Burk have been withdrawn.

8. Applicant's 8-17-09 arguments regarding rejections based in whole or in part upon Ruwisch and/or Ruwisch in view of Strehlau (as applicable) have been fully considered but they are not persuasive. Contrary to applicant's assertions, Ruwisch does indeed teach, or at least suggest, the supporting of its NO<sub>x</sub> storage component upon its homogeneous Mg-Al mixed oxide (said oxide also supporting Ruwisch's Pt and/or Pd). *See* Ruwisch at par. 38-39 and 43-44. Further, Ruwisch teaches or at least suggests the doping of said Mg-Al mixed oxide with rare earth oxides such as CeO<sub>2</sub> and/or Pr<sub>2</sub>O<sub>3</sub>, stating that such doping affords the advantage of added thermal stability to the Mg-Al mixed oxide. *See id.* at par. 42 and 46.

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In response to applicant's arguments against the Ruwisch and Strehlau references individually (esp. vis-à-vis claims 12 and 13, claim 12 now being cancelled and its limitations integrated into claim 1), one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. *See In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). It is noted that Strehlau was only mentioned once during applicant's arguments regarding Ruwisch- no arguments regarding *the combinability* of Strehlau with Ruwisch were proffered.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., that applicant's NO<sub>x</sub> catalyst's NO<sub>x</sub> storage efficiency is superior over that of Ruwisch's) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. *See In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Lastly, applicant's arguments vis-à-vis Ruwisch and/or Ruwisch in view of Strehlau appear to be limited to these documents' applicability to claim 1. No statements regarding their coverage of the dependent claims was found- the only arguments regarding dependent claims were made vis-à-vis Burk and/or Burk in view of Strehlau. Thus, Ruwisch and/or Ruwisch in view of Strehlau's applicability to the various dependent claims above is/are reasserted.

### ***Conclusion***

9. Applicant's amendment necessitated the/any new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. *See* MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL BERNIS whose telephone number is (571)270-5839. The examiner can normally be reached on Monday thru Thursday, 9AM-6PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached at (571)272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. B./ December 1, 2009

Examiner, Art Unit 1793

/Stuart Hendrickson/

Primary Examiner, Art Unit 1793